

Claim Amendments

Claim 1 (Cancelled).

2. (Currently amended) ~~The sensor of claim 1, wherein~~ A spin-valve type magnetoresistive sensor comprising:
a free ferromagnetic layer;
a pinned ferromagnetic layer;
a non-magnetic spacer layer sandwiched between the free ferromagnetic layer and the pinned ferromagnetic layer;
an anti-ferromagnetic layer disposed adjacent to the pinned ferromagnetic layer;
a non-magnetic back layer disposed adjacent to the free ferromagnetic layer on a side of the free ferromagnetic layer opposite the non-magnetic spacer layer;
and
an electron-reflective layer disposed adjacent to the back layer on a side of the non-magnetic back layer opposite the free ferromagnetic layer, the electron-reflective layer ~~comprises~~ comprising a tantalum oxide film formed from a tantalum layer having a thickness within a range of approximately 0.5 to 1.75 nm.

Claims 3-7 (Cancelled).

8. (Currently amended) The sensor of claim 4 2, wherein the non-magnetic back layer has a thickness within a range of approximately 0.5 to 1.5 nm.

9. (Currently amended) The sensor of claim 4 2, wherein [[:] the non-magnetic back layer comprises Cu.

Claim 10 (Previously canceled).

11. (Currently amended) An apparatus for sensing magnetic flux comprising:
a spin-valve type ~~magnetoresistance~~ magnetoresistive sensor having:
a free ferromagnetic layer;
a pinned ferromagnetic layer;
a non-magnetic spacer layer sandwiched between the free
ferromagnetic layer and the pinned ferromagnetic layer;
an anti-ferromagnetic layer disposed adjacent to the pinned
ferromagnetic layer;
a non-magnetic back layer disposed adjacent to the free ferromagnetic
layer on a side of the free ferromagnetic layer opposite the non-magnetic spacer
layer; and
an electron-reflective tantalum oxide layer disposed adjacent to the
non-magnetic back layer on a side of the non-magnetic back layer opposite the free
ferromagnetic layer.

Claims 12-20 (Previously canceled).

Claims 21 (Canceled).

22. (Currently amended) ~~The spin-valve magnetoresistance sensor of claim~~
~~24~~ A spin-valve magnetoresistive sensor, comprising:
a free magnetic layer;
a pinned magnetic layer;

a nonmagnetic spacer layer disposed between the free magnetic layer and the pinned magnetic layer;

an antiferromagnetic layer adjacent to the pinned magnetic layer, the pinned magnetic layer pinned by the antiferromagnetic layer; and

a non-magnetic back layer disposed adjacent to the free magnetic layer, the free magnetic layer adjoining and being disposed between the non-magnetic back layer and the nonmagnetic spacer layer, the non-magnetic back layer having a thickness within a range of approximately 0.5 to 1.5 nm;

an electron-reflective layer that adjoins the non-magnetic back layer on a side of the non-magnetic back layer opposite the free magnetic layer, wherein the electron-reflective layer comprises a tantalum oxide film.

23. (Currently amended) The spin-valve ~~magnetoresistance~~ magnetoresistive sensor of claim ~~24~~ 22, wherein the tantalum oxide film is formed from a tantalum layer having a thickness within a range of approximately 0.5 to 1.75 nm.

Claims 24 (Canceled).

25. (Currently amended) The spin-valve ~~magnetoresistance~~ magnetoresistive sensor of claim ~~24~~ 22, wherein the non-magnetic back layer comprises two or more non-magnetic metal layers.